



#3

03C0

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application

Inventor(s): Kreimer, et al.
SC/Serial No.: 09/925,189
Confirm. No.: 5291
Filed: August 8, 2001
Title: AMPLIFICATION OF ANALYTE
DETECTION WITH PASSIVATED
ENHANCING SURFACES HAVING
RECEPTORS


PATENT APPLICATION

Art Unit: Unknown
Examiner: Unknown

Customer No. 23910

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8

I hereby certify that this correspondence is being deposited in the United States Postal Service with sufficient postage as first class mail in an envelope addressed to **Commissioner for Patents, Washington, DC 20231**, on September 28, 2001.

 (Attorney Signature)
D. Benjamin Borson, Ph.D., Reg. No. 42,349
Signature Date: September 28, 2001

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. §1.56

Commissioner for Patents
Washington, DC 20231

Sir:

It is requested that the information identified in this statement be considered by the Examiner and made of record in the above-identified application. This statement is not intended to represent that a search has been made or that the information cited in the statement is, or is considered to be, material to patentability as defined in 37 C.F.R. §1.56. If this is a continuation, divisional or continuation-in-part application, it is understood that the Examiner will consider all information which was considered by the Office in a parent application. MPEP §609. Such information therefore is not listed herein unless it is desired that the information be printed on a patent issuing from the subject application.

Enclosed with this statement are the following:

- ☒ Form PTO-1449. The Examiner is requested to initial the form and return it to the undersigned in accordance with M.P.E.P. §609.
- ☒ A copy of each cited document as required by 37 C.F.R. §1.98. Copies are not submitted of documents previously submitted by the applicant in a parent application from which benefit under 35 U.S.C. §120 is claimed, 37 C.F.R. §1.98(d)(1), with an information disclosure statement submitted in the parent application which complies with the Sept. 8, 2000 or subsequent revision of 37 C.F.R. §1.98(a-c). If any of the cited/submitted documents is in a foreign language, a concise explanation of relevance is provided pursuant to 37 C.F.R. §1.98(a)(3)(i). For foreign language documents cited

in a search report by a foreign patent office, the requirement for a concise explanation of relevance is satisfied by the submission herewith of an English language version of the search report. MPEP §609A(3). If a written English-language translation of a non-English language document, or portion thereof, is within the possession, custody or control of, or is readily available to any individual designated in §1.56(c), a copy of the translation accompanies this statement, 37 C.F.R. §1.98(a)(3)(ii), and satisfies the requirement for a concise explanation of relevance, MPEP §609A(3).

— **PTA Statement under 37 C.F.R. §704(d).** Each item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in §1.56(c) more than thirty days prior to the filing of the information disclosure statement.

This statement should be considered because:

X **37 C.F.R. §1.97(b).** This statement qualifies under 37 C.F.R. §1.97, subsection (b) because:

- (1) It is being filed within three months of the filing date of an application other than a continued prosecution application under § 1.53(d);
-- OR --
- (2) It is being filed within 3 months of entry of a national stage;
-- OR --
- (3) It is being filed before the mailing date of the first Office Action on the merits,
-- OR --
- (4) It is being filed before the mailing date of the first Office Action after the filing of a Request for Continued Examination under 37 C.F.R. §1.114.

— **37 C.F.R. §1.97(c).** Although it may not qualify under subsection (b), this statement qualifies under 37 C.F.R. §1.97, subsection (c) because:

- (1) It is being filed before the mailing date of a FINAL office action, a Notice of Allowance, or an action that otherwise closes prosecution in the subject application, whichever occurs first.

-- AND (check at least one of the following) --

- (1) It is accompanied by a STATEMENT as set forth in 37 C.F.R. §1.97(e).
-- OR --
— (2) It is accompanied by the \$180 fee set forth in 37 C.F.R. §1.17(p).

— **37 C.F.R. §1.97(d).** Although it may not qualify under subsection (b) or (c), this statement qualifies under 37 C.F.R. §1.97, subsection (d) because:

- (1) It is being filed on or before payment of the issue fee;
-- AND --
- (2) It is accompanied by a STATEMENT as set forth in 37 C.F.R. §1.97(e);
-- AND --

(3) It is accompanied by the \$180 fee set forth in 37 C.F.R. §1.17(p).

✓ **Fee Authorization.** The Commissioner is hereby authorized to charge underpayment of any additional fees or credit any overpayment associated with this communication to Deposit Account No. 06-1325. A duplicate copy of this authorization is enclosed.

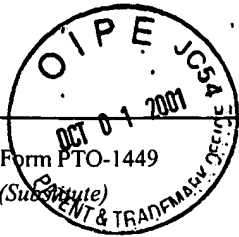
Respectfully submitted,

FLIESLER DUBB MEYER & LOVEJOY LLP

Date: Sept. 28, 2001

By: D. Benjamin Borson
D. Benjamin Borson, Ph.D., Reg. No. 42,349

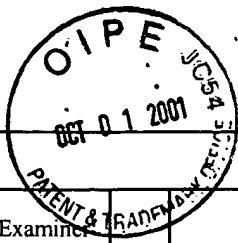
FLIESLER DUBB MEYER & LOVEJOY LLP
Four Embarcadero Center, Fourth Floor
San Francisco, California 94111-4156
Telephone (415) 362-3800



U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use several sheets if necessary)</i>	Attorney Docket Number ARBS1002US3SRM/DBB	Serial/Patent Number 09/925,189
	Applicant/Patent Owner Kreimer, et al.	
	Filing/Issue Date 08/08/01	Group Art Unit Unknown

U.S. PATENTS

Examiner Initial	Patent Number	Issue Date	First Named Inventor	Class	Subclass	Filing Date
	5,391,272	2/21/95	O'Daly et al.	204	153.12	
	5,255,067	10/19/93	Carrabba et al.	356	301	
	5,334,296	8/2/94	Henkens et al.	204	153.12	
	5,194,913	3/16/93	Myrick et al.	356	301	
	5,376,556	12/27/94	Tarcha et al.	436	525	
	5,400,136	3/21/95	Vo-Dinh	356	301	
	5,404,218	4/4/95	Nave et al.	356	301	
	5,468,644	11/21/95	Stephenson et al.	436	163	
	5,498,875	3/12/96	Obremski et al.	250	458.1	
	5,604,587	2/18/97	Che et al.	356	246	
	5,615,673	4/1/97	Berger et al.	128	633	
	5,621,522	4/15/97	Ewing et al.	356	301	
	5,630,924	5/20/97	Fuchs et al.	204	601	
	5,693,152	12/2/97	Carron	148	271	
	5,836,317	11/17/98	Kunst	128	898	
	5,866,430	2/2/99	Grow	436	172	
	5,891,738	4/6/99	Soini et al.	436	501	
	6,033,546	3/7/00	Ramsey	204	603	
	6,040,906	3/21/00	Harhay	356	301	
	6,044,285	3/28/00	Chaiken et al.	600	316	
	6,064,897	5/16/00	Lindberg et al.	600	316	
	6,087,182	7/11/00	Jeng et al.	436	66	

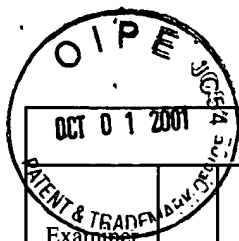


U.S. PATENTS

Examiner Initial	Patent Number	Issue Date	First Named Inventor	Class	Subclass	Filing Date
	6,126,901	10/3/00	Patch et al.	422	64	
	6,149,868	11/21/00	Natan et al.	422	82.05	
	5,112,127	5/12/92	Carrabba et al.	356	301	
	6,141,095	10/31/00	Allen et al.	356	301	
	6,181,957	1/30/01	Lambert et al.	600	319	
	5,266,498	11/30/93	Tarcha et al.	436	525	
	5,306,403	4/26/94	Vo-Dinh	204	182.8	
	5,567,628	10/22/96	Tarcha et al.	436	525	
	5,721,102	2/24/98	Vo-Dinh	435	6	
	5,783,389	7/21/98	Vo-Dinh	435	6	
	5,814,516	9/29/98	Vo-Dinh	435	287.2	
	5,864,397	1/26/99	Vo-Dinh	356	301	
	5,938,617	8/17/99	Vo-Dinh	600	476	
	6,025,202	2/15/00	Natan	436	104	

U.S. PATENT PUBLICATIONS

Examiner Initial	Patent Application Publication Number	Publication Date	Applicant



PENDING U.S. PATENT APPLICATIONS

Examiner Initial	Application Number	Filing Date	First Named Inventor	Petition to Expunge? Yes No

FOREIGN PATENT DOCUMENTS

Examiner Initial	Document Number	Publication Date	Country	Class	Subclass	Translation Yes No
	EP 0 587 008	10.02.99	EPO			
	WO 01/06257	25.01.01	PCT			
	WO 98/50777	12.11.98	PCT			
	WO 99/44045	02.09.99	PCT			
	WO 99/44065	02/09/99	PCT			
	WO 01/15288	01.03.01	PCT			
	WO 99/67623	12.29.99	PCT			
	SU 1064-115 A	12.30.83	Soviet Union			✓
	JP 59-15792 A	1.26.84	Japan			✓

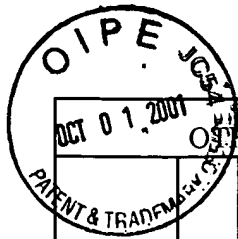
OTHER DOCUMENTS (Include author (if any), title, publisher and place of publication, date and pertinent pages)

	Carrabba et al., "The Prospect of Utilizing Surface Enhanced Raman Spectroscopy (SERS) for bio- and biomedical sensing," <i>SPIE Vol. 1201 Optical Fibers in Medicine V (1990)</i> , pp. 438-446.
--	---



OTHER DOCUMENTS (Include author (if any), title, publisher and place of publication, date and pertinent pages)

	Andres, R.P., et al., "Self-Assembly of a Two-Dimensional Superlattice of Molecularly Linked Metal Clusters," <i>Science</i> , Vol. 273, 20 September 1996, pp. 1690-1693.
	Campion, A. and Kambhampati, P., Surface-Enhanced Raman Scattering," <i>Chemical Society Reviews</i> , 1998, Volume 27, pp. 241-250.
	Chee, M., et al., "Accessing Genetic Information with High-Density DNA Arrays," <i>Science</i> , Vol. 274, 25 October 1996, pp. 610-614.
	Danilova, Y.E., et al., "Absorption Spectra and Photomodification of Silver Fractal Clusters," <i>Fractal Reviews in the Natural and Applied Sciences</i> , Institute of Automation and Electrometry, Russian Academy of Science, Siberian Branch, pp. 101-112.
	Elghanian, R., et al., "Selective Colorimetric Detection of Polynucleotides Based on the Distance-Dependent Optical Properties of Gold Nanoparticles," <i>Science</i> , Vol. 277, 22 August 1997, pp. 1078-1081.
	Gadenne, P., et al., "Giant Stokes Fields on Semicontinuous Metal Films," <i>J. Opt. Soc. Am. B</i> /Vol. 15, No. 1, January 1998, pp. 68-72.
	Graham, D., et al., "Selective Detection of Deoxyribonucleic Acid at Ultralow Concentrations by SERRS," <i>Analytical Chemistry</i> , Vol. 69, No. 22, November 15, 1997, pp. 4703-4707.
	Hacia, J.G., et al., "Enhanced high density oligonucleotide array-based sequence analysis using modified nucleoside triphosphates," <i>Nucleic Acids Research</i> , 1998, Vol. 26, No. 21, pp. 4975-4982.
	Igloi, G.L., "Variability in the Stability of DNA-Peptide Nucleic Acid (PNA) Single-Base Mismatched Duplexes: Real-Time Hybridization During Affinity Electrophoresis in PNA-Containing Gels," <i>Proc. Natl. Acad. Sci USA</i> , Vol. 95, July 1998 Biochemistry, pp. 8562-8567.
	Ingram, R.S., et al., "Poly-hetero-functionalized Alkanethiolate-Stabilized Gold Cluster Compounds," <i>J. Am. Chem. Soc.</i> , 1997, Volume 119, pp. 9175-9178.
	Jones, J.C., et al., "Quantitative Assessment of Surface-Enhanced Resonance Raman Scattering For the Analysis of Dyes on Colloidal Silver," <i>Analytical Chemistry</i> , Vol. 71, No. 3, February 1, 1999, pp. 596-601.
	Kim, W., et al., "Fractals in Microcavities: Giant Coupled, Multiplicative Enhancement of Optical Responses," <i>Physical Review Letters</i> , Volume 82, Number 24, 14 June 1999, pp. 4811-4814.
	Kneipp, K., et al., "Detection and Identification of a Single DNA Base Molecule Using Surface-Enhanced Raman Scattering (SERS)," <i>Physical Review E</i> , Volume 57, Number 6, June 1998, pp. R6281 - R6284.
	Kneipp, K., et al., "Single Molecule Detection Using Surface-Enhanced Raman Scattering (SERS)," <i>Physical Review Letters</i> , Volume 78, Number 9, 3 March 1997, pp. 1667-1670.
	Kurokawa, Y., et al., "Surface-Enhanced Raman Spectroscopic Detection of CO ₃ ²⁻ , SO ₃ ²⁻ , and Nucleic Acid Bases Using Polyvinyl Alcohol Film Doped with Ag Fine Particles," <i>Analytical Biochemistry</i> 209, 1993, pp. 247-250.
	Lisy, V., et al., "Internal DNA Modes Below 25 cm ⁻¹ : A Resonance Raman Spectroscopy Observation," <i>Journal of Biomolecular Structure & Dynamics</i> , ISSN 0739-1102, Volume 14, Issue Number 4, 1997, pp. 517-523.
	Michael, K.L., et al., "Randomly Ordered Addressable High-Density Optical Sensor Arrays," <i>Analytical Chemistry</i> , Vol. 70, No. 7, April 1, 1998, pp. 1242-1248.



OTHER DOCUMENTS (Include author (if any), title, publisher and place of publication, date and pertinent pages)

	Mucic, R.C., et al., "DNA-Directed Synthesis of Binary Nanoparticle Network Materials," <i>J. Am. Chem. Soc.</i> , 1998; Volume 120, pp. 12674-12675.
	Nie, S. et al., "Probing Single Molecules and Single Nanoparticles by Surface-Enhanced Raman Scattering," <i>Science</i> , Volume 275, 21 February 1997, pp. 1102-1106.
	Owen, J.F., et al., "Enhancement of Fluorescence Induced by Microstructure Resonances of a Dielectric Fiber," <i>Physical Review Letters</i> , Volume 47, Number 15, October 12, 1981, pp 1075-1078.
	Peterlinz, K.A., et al., "Observation of Hybridization and Dehybridization of Thiol-Tethered DNA Using Two-Color Surface Plasmon Resonance Spectroscopy," <i>J. Am. Chem. Soc.</i> , Vol. 119, No. 14, 1997, pp. 3401-3402.
	Plekhanov, A.I., et al., "Production and Spectroscopic Study of Silver Fractal Clusters by Laser Vaporization of Target," <i>Opt. Spectrosc. (USSR)</i> 71 (5), November 1991, pp. 451-454.
	Ratilainen, T., et al., "Hybridization of Peptide Nucleic Acid," <i>Biochemistry</i> 1998, 37, pp. 12331-12342.
	Safonov, V.P., et al., "Spectral Dependence of Selective Photomodification in Fractal Aggregates of Colloidal Particles," <i>Physical Review Letters</i> , Volume 80, Number 5, 2 February 1998, pp. 1102-1105.
	Weitz, D.A., et al., "Colloidal Aggregation Revisited: New Insights Based on Fractal Structure and Surface-Enhanced Raman Scattering," <i>Surface Science</i> , Volume 158, 1985, pp. 147-164.
	Xiao, T., et al., "Hunting for the Active Sites of Surface-Enhanced Raman Scattering: A New Strategy Based on Single Silver Particles," <i>Physical Review Letters</i> , Volume 78, Number 9, 3 March 1997, pp. 632-638.
	Zou, S., et al., "Surface-Enhanced Raman Scattering of Ultrathin Cadmium Chalcogenide Films on Gold Formed by Electrochemical Atomic-Layer Epitaxy: Thickness-Dependent Phonon Characteristics," <i>J. Phys. Chem. B</i> 1999, 103, pp. 2323 -2326.

Examiner

Date Considered

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

*1 = Copy not submitted because it was submitted in prior application SN ____/____, filed _____, 20____, relied on under 35 USC §120.

*2 = Copy not submitted because it was submitted in prior application SN ____/____, filed _____, 20____, relied on under 35 USC §120.